



Attorney Docket: 225/48731

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
MAIL ROOM

Applicant: OTMAR BITSCHKE ET AL.

Serial No.: 09/540,201

Group Art Unit: 2834

Filed: MARCH 31, 2000

Examiner: T. Lam

Title: RELUCTANCE MOTOR WITH AT LEAST TWO SALIENT
POLES EACH PROVIDED WITH AN EXCITER WINDING, AND
METHOD FOR MANUFACTURING THE STATOR OF SUCH....

#8/ Response
Hawkins
8/14/01

RESPONSE UNDER 37 C.F.R. §1.111

Box Non-Fee Amendment
Commissioner for Patents
Washington, D.C. 20231

Sir:

The following comments are addressed to the outstanding
Patent Office Action dated July 2, 2001 in conjunction with
claims 1-10 of the present application.

REMARKS

Reconsideration and allowance of this application are
respectfully requested in view of the discussion below.

Applicants' invention is addressed to a reluctance motor
and a method for manufacturing the stator of the reluctance
motor as claimed in respective independent claims 1, 8 and 9.

The environment of the present invention is a reluctance
motor with at least two salient stator poles each having an
exciter winding. Prior art reluctance motors were concerned
with radial forces exerted against the coil when current

flowed. A series of fastening means were used in which the coil wedges were driven manually into gaps between adjacent coils so that the coils are clamped between the stator teeth. These wedges were difficult to position and was a very time consuming process. Furthermore, a resultant force acts on the coils which has an inwardly directed component and the friction between the coil and the stator must be large in order to ensure that the coil is firmly seated. Furthermore, such coils take up part of the space between adjacent stator teeth.

The invention involves a solution to the prior art problem concerning radial forces acting towards the stator yoke by providing that they are applied simultaneously on all exciter coils and hold the exciter coils in their positions on the stator poles. A radially outward spring bias, such as created by a snap ring, is positioned with its outer side against the sides which face the rotor of the exciter coil surrounding the stator poles or their winding bodies. This bias spring force is exerted directly radially outward against the exciter coils. The coils are held firmly between the biasing means (snap ring) and the yoke of the stator.

Independent claim 1 provides a rotor 1 and at least two salient stator poles 14-19 with each of the stator poles having an exciter coil 20-25 respectively surrounding the

stator poles and with one end of the exciter coils facing the rotor 1. A spring biasing device 27 provides a radially outward force on the end of the exciter coil facing the rotor in a direction away from the rotor.

Independent claim 9 specifies the arrangement of Figure 3 wherein one biasing means 28, 29 is provided against an end of each of the exciter coils which faces the rotor to apply radial force to the exciter coils in a direction away from the rotor.

Independent claim 8 provides the method of manufacturing a stator of a motor involving the step of applying at least one snap ring to the ends of exciter coils facing away from a yoke of the stator and then applying casting resin into the exciter coils and the interstices between the exciter coils.

The outstanding Patent Office Action contains a rejection of claims 1-10 under 35 U.S.C. §102 as anticipated by the reference to Carpenter for the reasons indicated at Item 3 on pages 2 and 3 of the Patent Office Action.

According to the Patent Office analysis, the reference to Carpenter has an exciter coil 17 surrounding stator poles and a spring biasing device 24 contacting the end of the exciter coils facing the rotor wherein the spring biasing device provides a radially outward force on the ends of the coils facing the rotor in the direction away from the rotor. With

respect to claim 8, the rejection indicates that the method is inherent given the apparatus of Carpenter and it is noted that the rejection contains an indication that "regarding claim 2, wherein said spring biasing device is at least one snap ring" without any indication as to what portion of Carpenter is considered to be a snap ring.

Applicants respectfully traverse these rejections on the grounds that each of independent claims 1, 8 and 9 provide a structure and a method which as a whole is not shown or disclosed or made obvious by the reference to Carpenter.

U.S. Patent No. 2,907,904 to Carpenter relates to a capacitor starting and running type motor wherein both the main winding and the capacitive winding are formed as distributed windings in extended slots about the periphery of the stator field, as shown in the Figures 2 and 3. The stator 10 has a field stack 15, main winding 16 and capacitor winding 17. The main winding surrounds the first salient poles 18 and the capacitive winding 17 surrounds the narrow and parallel sided poles 19. The windings 16 and 17 are held in place by insulated wedges 20. Furthermore, the tips of the poles are grooved at 23 for receiving strips or wedges 24 of magnetic material which "serve the double function of distributing the flux more evenly and holding the capacitor winding 17 in place".

It can be clearly seen from Figures 2 and 3 and the above description from Columns 2 and 3 of the '904 reference that the wedges 24, contrary to the assertion of the rejection in the Patent Office Action, do not constitute a "spring biasing device" and do not provide a radially outward force on the ends of the exciter coils facing said rotor in a direction away from said rotor". Any force exerted by the wedges 24 is against the windings in a direction perpendicular to a direction away from the rotor. Furthermore, there is no indication that there is any spring biasing provided by the magnetic material 24.

Thus, because of a different structure and a different purpose, independent claims 1 and 9 patentably define over Carpenter.

The method of manufacture of independent claim 8 specifically recites the provision of a snap ring to the ends of the exciter coils facing away from the yoke of the stator and applying a casting resin to the exciter coils. It is submitted that Carpenter has no indication of any resulting application of "at least one snap ring" to the ends of the exciter coils. Once again, as indicated above, it is submitted that the strips or wedges 24 of magnetic material are not spring biased and are certainly not a "snap ring" as is specifically claimed in independent claim 8.

Therefore, it is submitted that because of the differences in purpose and more particularly, because of the differences in structure, Applicants have defined a reluctance motor and a method for manufacturing a stator of a reluctance motor in such a manner that it is not disclosed or made obvious by the reference to Carpenter.

Therefore, Applicants respectfully request that this application containing claims 1-10 be allowed and be passed to issue.

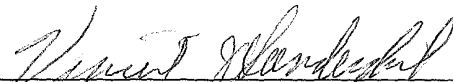
If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

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If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #225/48731).

Respectfully submitted,

August 8, 2001


Gary R. Edwards
Registration No. 31,824
Vincent J. Sunderdick
Registration No. 29,004

CROWELL & MORING, LLP
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 628-8800
Facsimile No.: (202) 628-8844

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